



# My Junior Ranger Activity Book



Name: \_\_\_\_\_

Pictured Rocks National Lakeshore, Michigan

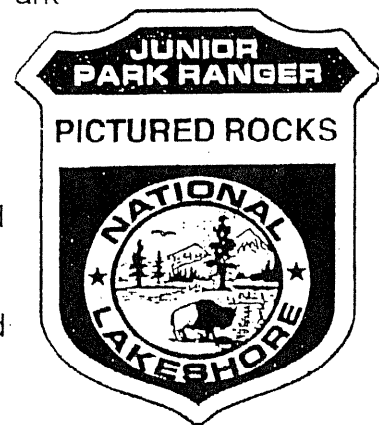
# WELCOME to Pictured Rocks National Lakeshore's Junior Ranger Program!

Being a Junior Ranger is more than completing this booklet. Being a ranger is a way of life! It is a lifestyle that enjoys exploring the outdoors safely. It is a lifestyle that believes in living lightly on the earth to avoid harming our natural and cultural resources - plants and animals, historic buildings and archeological sites.

This activity book is designed to help you learn about this National Park Service area and have fun at the same time! It is divided into three sections of activities for children in grades K-1, 2-3, and 4-6.

All activities are linked to the common theme of **diversity**. The Junior Ranger Program will help you explore how the natural and human diversity has shaped - and continues to shape - the Pictured Rocks National Lakeshore area.

Good luck on your learning adventures and on becoming a Pictured Rocks Junior Ranger!



## How Do You Become a Pictured Rocks National Lakeshore Junior Ranger?



It's easy! Just complete your section of the booklet for grades K-1, 2-3 or 4-6. There are many ways to find the answers to questions in your booklet. The best way is to find them on your own by visiting the places and looking for clues, reading information in park publications, looking at signs in the park, or by attending ranger-led interpretive programs. Your parents can help, but please don't let them tell you the answers! You must find them on your own.

When you have completed the book, take it to a Lakeshore visitor center and have a park ranger review your work and sign your certificate. You will then receive a Pictured Rocks Junior Ranger Badge.

## Your Safety - FIRST!

**Hypothermia** - One of the most common causes of injury and death to people in national parks is when the body's core temperature drops - hypothermia. Avoid getting wet while hiking or boating. If you hike, take a compass and map along so you don't get lost. If you become lost stay put and let help come to you. Stay close to shore and wear your personal floatation device while boating on Lake Superior. Lake Superior is extremely cold!

**Cliffs** - Pictured Rocks has sandstone cliffs for 15 miles along the shoreline. Stay back from the edge and cliff overhangs. Sandstone can be very slippery! Please stay on the main trail along the cliffs.

**Poisonous Plants or Animals** - Patches of poison ivy grow in the eastern part of the park. Remember, if you see a plant with leaves of three - let it be! There are no poisonous animals in the lakeshore.

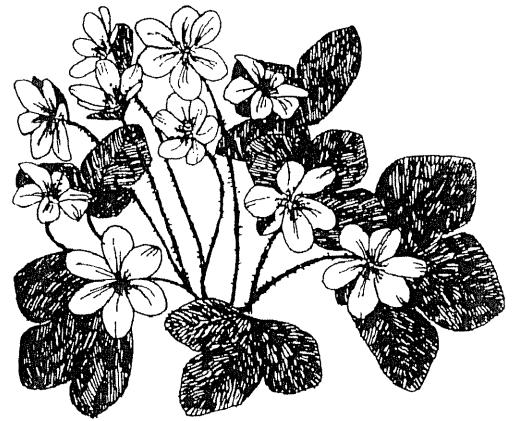
**Black Bears** - Most animals are generally more afraid of people than we are of them, but there are times when your actions can make an animal dangerous. Feeding bears makes them aggressive beggars - keep your campsite clean and all food locked in your car trunk!. Getting between a mother bear and her cubs may provoke an attack. Getting too close to any wild animal may scare them and cause them to become aggressive.



## Caring For the Park

**Litter** - Litter should always be put in its place. It is unsightly and may harm wildlife. Recycle your trash into the proper cans provided in the park.

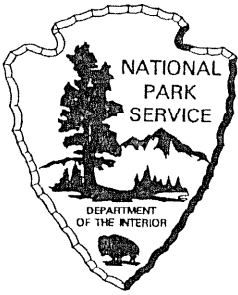
**Wildlife** - All animals have a natural food supply. When you feed wildlife you may be giving them food lacking in the vitamins and nutrients they need. This can make them sick or they may die. Feeding wildlife may increase their numbers and cause them problems. For example, an increased seagull population may cause shoreline eagles to have less food.



*hepatica*

**Plants** - Stay on marked trails to prevent soil erosion and trampling of plants along the trail. Driving nails in trees or removing birch bark may lead to diseases which can kill the tree.

**Removing things from the park** - National park resources are protected by law and cannot be removed. This includes things like picking wildflowers or removing shipwreck parts off the beach. You may pick berries, fruit, and mushrooms to eat. When in doubt - ask a ranger!

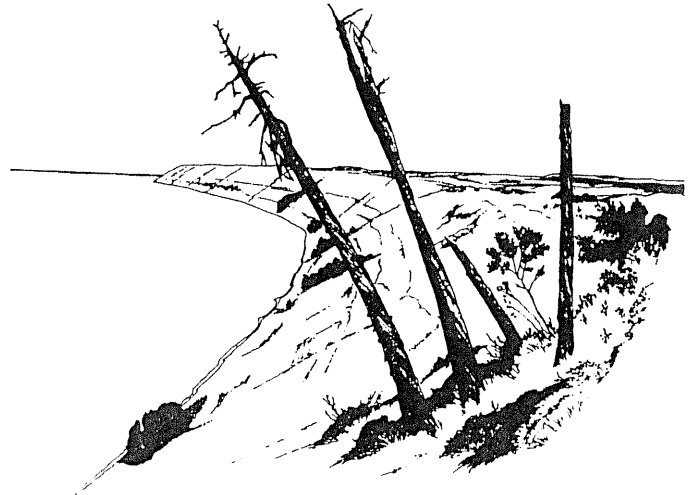


## Why Do We Have National Parks?

The purpose of the over 370 National Park areas across the United States is to protect some of our nation's most unique scenery, natural and historic objects. At the same time national parks enable people to visit and enjoy these areas without harming them.

## Why Is There a Pictured Rocks National Lakeshore?

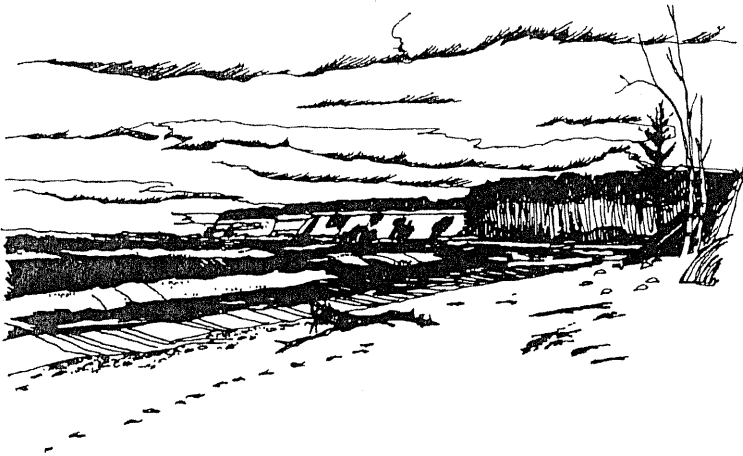
Pictured Rocks National Lakeshore was set aside by Congress to preserve a portion of the Great Lakes shoreline and keep it available for people to see and enjoy in an undisturbed condition. Visitors like you can hunt, fish, boat, hike, ski, snowmobile, and participate in a variety of other activities all year long here at the lakeshore.



## Why Study Diversity?

The topic for Junior Ranger study at Pictured Rocks is *diversity*. Diversity is another word for variety. Diversity is a very important part of the natural world. Having a diversity of life forms helps assure that life will continue even if there are changes in the environment. Diversity is also a very important part of our human culture. Having a diversity of humans guarantees diverse ways of relating to and looking at the world.

### Pictured Rocks = DIVERSITY



Pictured Rocks National Lakeshore has a diversity of natural features, life forms and human history. We hope this Junior Ranger Program gives you some understanding of many of these and inspires you to help protect them.

## Kindergarten - First Grade Activities

K-1

### The Pictured Rocks Shoreline

**Background:** Pictured Rocks has a diverse shoreline!

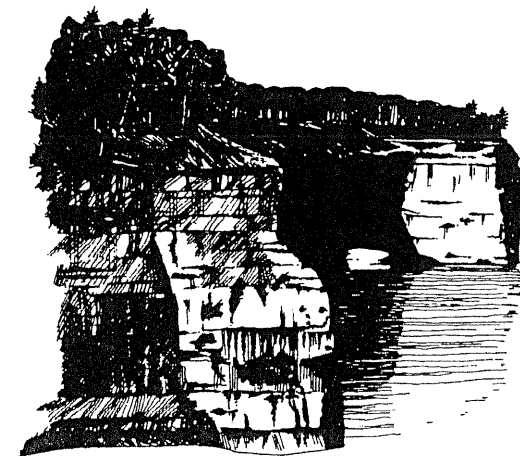
**Directions:** In the drawings below, color one of the three types of shorelines found at Pictured Rocks: the cliffs with mineral stains on them which look like "pictures," multi-colored pebble beaches, or sandy beaches. Visit at least one of the three types of shorelines to compare them to your drawing. Put an **X** by the lakeshore types you visited. Draw a line between the drawing and the shoreline name.

\_\_\_\_\_ Pictured Rocks cliffs





\_\_\_\_\_ Au Sable Point



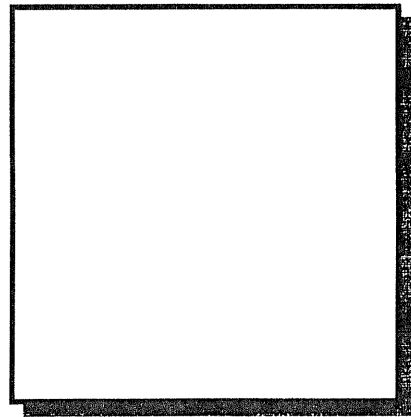
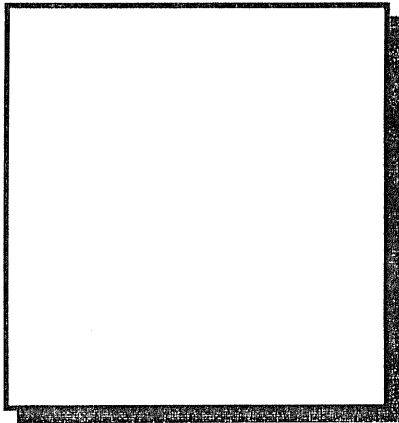
\_\_\_\_\_ Miners Beach



## Forests of the National Lakeshore

**Background:** Pictured Rocks has a variety of trees!

**Directions:** While visiting the park, stop, look, touch and smell the bark of three different trees. Draw and color each bark in the space provided.



**Draw your bark samples here...**

**Answer the question:** *What does bark do for a tree?*

**Directions:**

If you are camping in the park, visit a tree that looks "special" to you and give it a name. Sit down by "your" tree for several minutes a couple of times each day. Do this for as long as you are camping. Write any discoveries you make about "your" tree or write a short story about it...

**Your tree's name:** \_\_\_\_\_

**Tree discoveries or story:**

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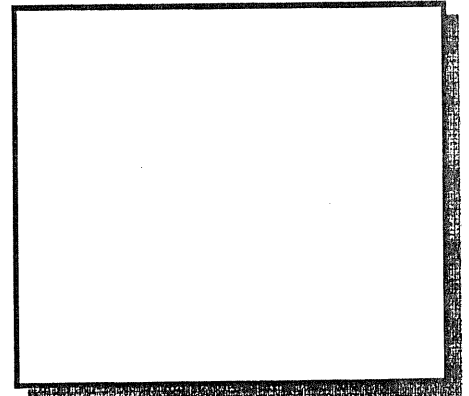
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## Streams of the National Lakeshore

**Background:** Pictured Rocks has a variety of streams - short, long, tiny, large!

**Directions:** Follow a marked trail along at least one stream in the park. Stop and listen to the stream every few minutes.

**Answer the question:** How does the sound of the stream make you feel?

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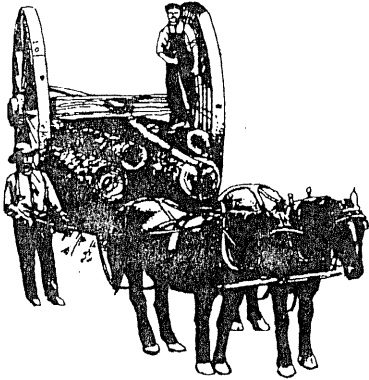
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If the stream's sound reminds you of a song -- sing it!

## Logging History of Pictured Rocks



**Background:** Because there was a variety of large trees in this area it was important for logging in the late 1800's.

**Directions:** Draw a line between the Pictured Rocks area logging history and the correct description of it. Color the drawings.

**A "tree graveyard"** (An area near the park called the Kingston Plains where cutting and fires set by people altered this ancient white pine forest of four foot diameter trees.)



**Two person cross-cut saw** (The old way - before chainsaws.)

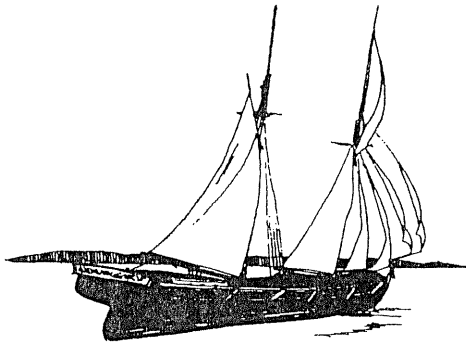


**Horse drawn "big wheels" logging sled** (A way of getting logs to railroads, lakes, rivers or the Log Slide.)

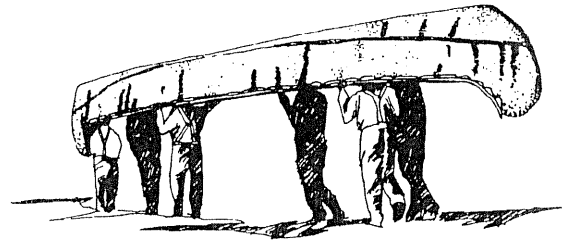
## Boating Along the Lakeshore

**Background:** People have traveled along the Pictured Rocks cliffs for hundreds of years in different kinds of boats.

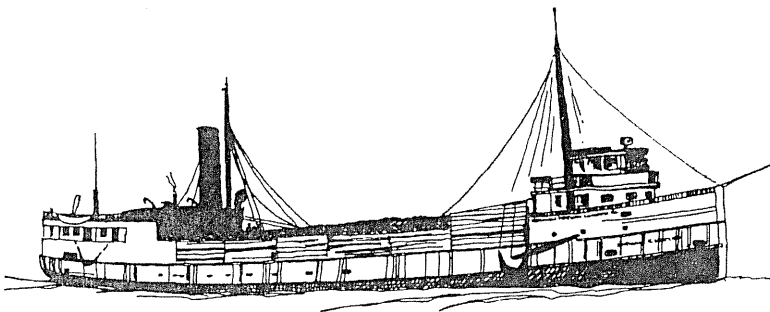
**Directions:** Draw a line between the boat from the Pictured Rocks area and the correct description. Color in the drawings.



**Birch Bark Canoe** – a favorite of area Native Americans and French-Canadian voyageurs.



**Steam Barge** – hauled iron ore to blast furnaces around the area or to pulled rafts of logs to sawmill towns like Munising and Grand Marais.



**Sailing Schooner** – used in late 1800's as a fishing boat and to transport some early tourists.

## People of the Pictured Rocks

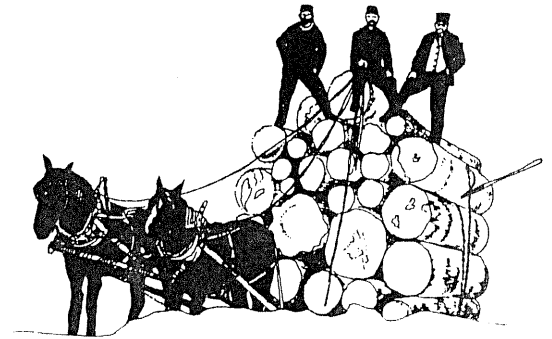
**Background:** A diversity of people have lived along the Pictured Rocks shoreline for hundreds - *thousands* - of years.

**Directions:** Draw a line between a person of the Pictured Rocks area and the item they are known for. Color in the drawings.

**Ojibway** (Area Native Americans call themselves Anishinabe, which means original people)



**French Canadians, Scotch and Irish**  
(Made up the largest group of people moving into the Pictured Rocks area in the late 1800's. They worked as lumberjacks in the forest or at the blast furnace in Munising.)

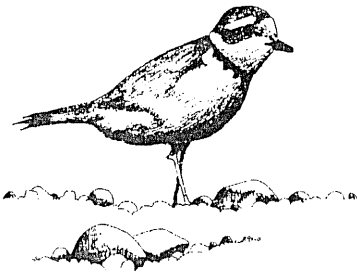


**National Park Rangers** (People of many backgrounds and training who protect our nation's natural and cultural resources.)

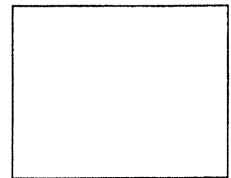
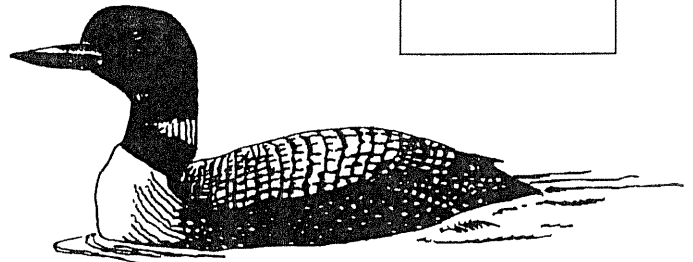
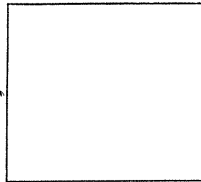
## The Pictured Rocks Shoreline

**Background:** Pictured Rocks provides habitat for a diversity of threatened or endangered species living along its shoreline.

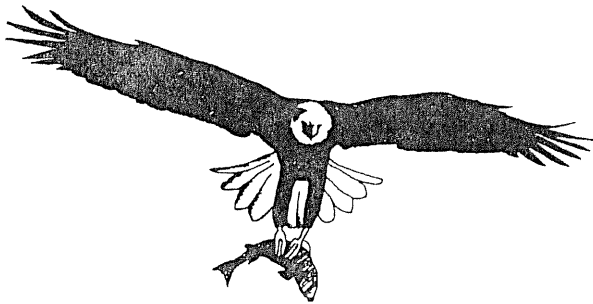
**Directions:** Look at each bird picture below. In each box draw the correct beak so the birds can catch their food.



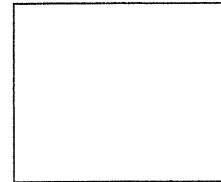
The endangered piping plover runs along the beach catching small insects.



Loons are powerful swimmers that swim underwater to catch fish in their beaks.



Bald eagles eat dead animals or catch fish swimming near the surface. They tear flesh with their beaks.





## Forests of the National Lakeshore

**Background:** All forests are not alike. There is a diversity of animals found in each forest type.

**Directions:** Go to two different types of forests within the national lakeshore. Describe each kind of forest. Walk off a section of ground about five paces square. Mark the corners with a stone and sides with rope or string. Count the number of different kinds of plants and animals in your square in each of the two different forests. Record the information below.

Forest type #1 description:

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Forest Type #2 description:

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Total number of plants in square: \_\_\_\_\_

Total number of plants in square: \_\_\_\_\_

Total number of animals in square: \_\_\_\_\_

Total number of animals in square: \_\_\_\_\_

**Answer the question:** *Why do you think each area is different?*

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## Streams of the National Lakeshore

**Background:** Each stream has a variety of life in it - just like the forest! Streams are used by people in many ways - for fishing, canoeing, and to generate electricity. The National Park Service protects streams in their natural condition for animals and plants and for people in the future to enjoy.

**Directions:** The cold, clean streams in Pictured Rocks National Lakeshore provide a special home or habitat for a diversity of life forms. As you visit the park, observe animals, their tracks, or other information so you can list the different animals that might come to the stream. Draw pictures of some of these animals below.



River Otter Track

## Forest Management at Pictured Rocks

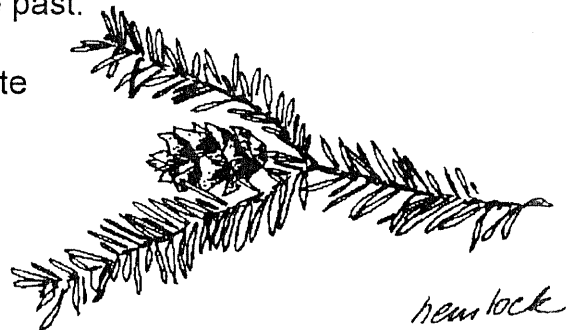
**Background:** People manage forests for a variety of reasons.

**Directions:** Be a nature detective! Find out what the three following forest management practices provide, for people or animals, today or in the past. Look at interpretive signs in the park, or printed trail guides or materials available in the visitor centers. Write your best explanation after each example.

**Stripping the bark off hemlock trees:**

**Leaving dead trees standing or not cutting down old growth trees:**

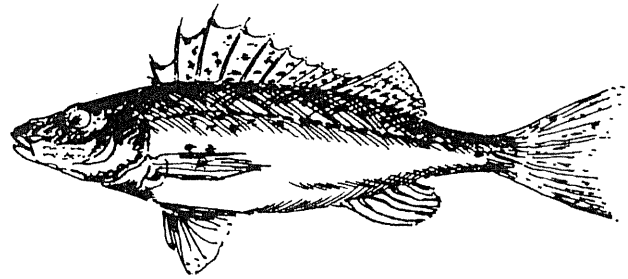
**Selectively cutting hardwood trees:**



**NOTE:** The National Park Service allows the forest to grow naturally without human involvement. This means that native trees are not cut down unless they pose a safety hazard to people. Naturally caused fires may be allowed to burn. This management practice is meant to preserve a natural ecosystem allowing for a diversity of life to exist.

## Fish of the National Lakeshore

**Background:** There are many types of fish in Lake Superior, including some that are not native to the lake. A small perch-like fish called a ruffe has been discovered in the lake. Scientists believe they were taken into ship ballast elsewhere in the world and dumped out in Lake Superior. Scientists also think these non-native invaders may reduce populations of native fish.



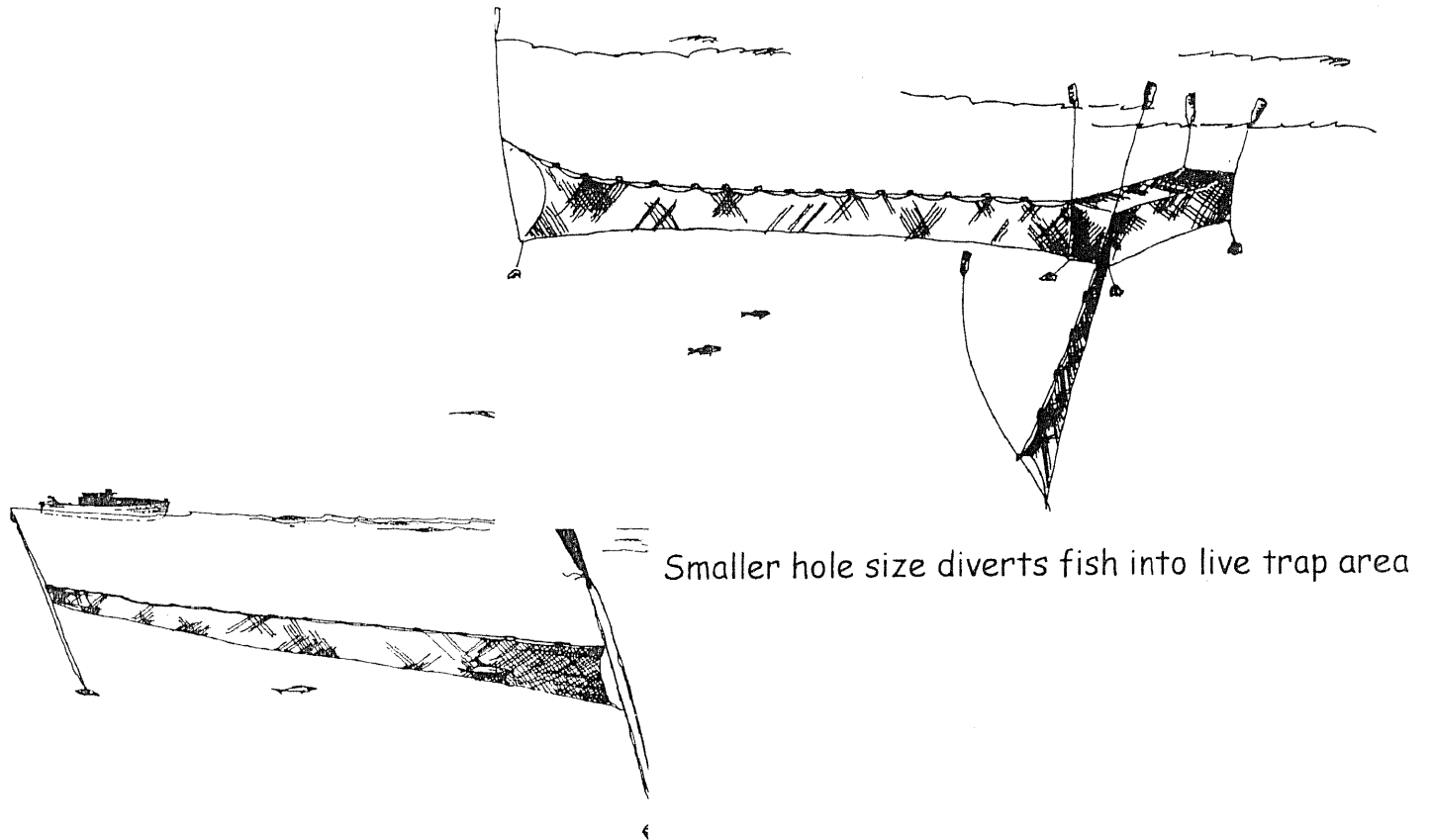
Ruffe

**Answer the question:** How could a new species like the ruffe cause other species in Lake Superior to decline in numbers? (Hint: Think about the basic needs of all living things.)

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**Background:** Since the fall of 1661 when the first white explorers visited the Pictured Rocks area, people have fished with nets for Lake Superior whitefish and lake trout. Today, two kinds of fishing nets are used - gill nets and trap nets. One kind is more dangerous to loons diving under water to catch fish.

**Directions:** By looking at the two kinds of nets drawn below - draw an **X** across the one which could easily trap and drown a loon. Why did you chose the one you did?



Smaller hole size diverts fish into live trap area

Larger hole size to catch fish by the gills and drown them

## Boat Travel Along the Lakeshore

**Background:** A multitude of goods are shipped along the Pictured Rocks shoreline both now and in the past. Many of these goods helped build our country and economy. Some still do.

**Directions:** Match the description of the goods transported with the correct drawing, then color the drawings.

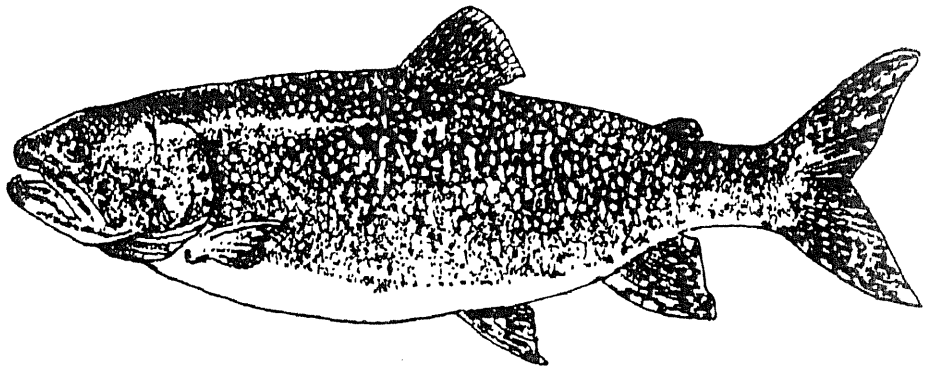


This object helped build homes in a westward growing United States.

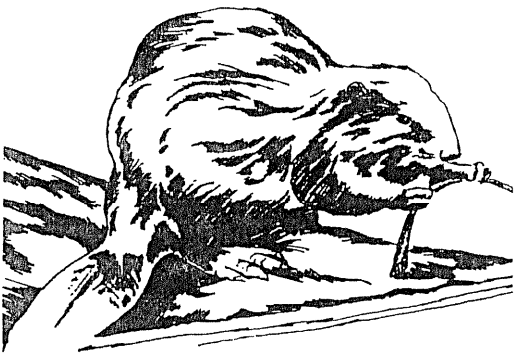


These were in high demand for hats in Europe in the 1700's.

These are processed into iron or steel products.



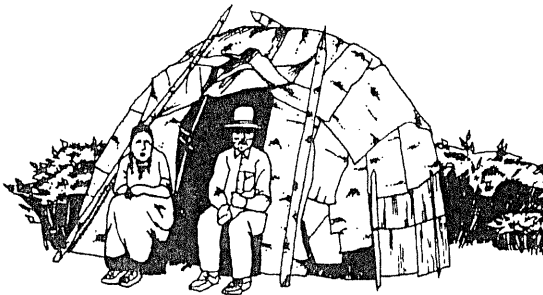
These are shipped to some of the finest restaurants in the United States.



## People of the Pictured Rocks

**Background:** Many nationalities of people have lived in the Pictured Rocks area through the years. In the late 1800's, people from 23 different countries immigrated to this area seeking work and better living conditions. It's fun to learn about what these people were like and what skills they brought.

**Directions:** Read the following short story about each of the following groups of people. Then write a story in your own words of what you believe each group of people was or is like.



**Anishinabe** (Ojibwa Native Americans of Pictured Rocks then and now) *"The local Indians made use of the edible plants nature had provided...white birch and cedar were the trees most useful to them to make their wigwams, canoes and food containers...Nets were made which the women used to catch fish...The people moved to sugar maple sites in the spring where they could collect maple sap to make sugar and then they moved to their fishing grounds near the shoreline."*



**French Voyageurs** (during the fur trade era) *"No portage was too long for me... No water or weather ever stopped our canoes... Fifty songs a day were nothing to me ... There is no life so happy as the voyageur's ... where a man enjoys so much variety and freedom..."*

**Your thoughts:** \_\_\_\_\_

\_\_\_\_\_



**Your thoughts:**

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**Finnish people -**

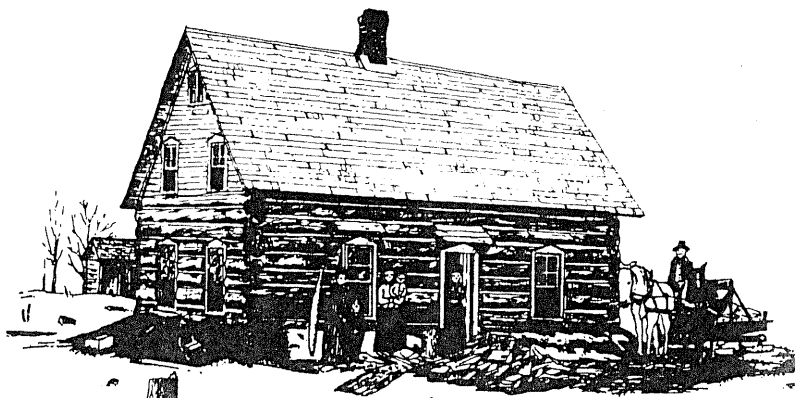
In the mid 1800's most people in Finland hoped to own a small farm. Because of poor economic times, Finns came to this area to cut timber or work at the blast furnace in Munising. They hoped to earn enough money to buy some land and start a farm. Many of the Finns who came here were Lutherans. They were known for their music bands and also enjoyed ice skating and skiing on homemade skis. Finns enjoy steam baths called saunas.

**Your thoughts:**

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## **The Pictured Rocks Shoreline**

**Background:** This National Park lies on the shoreline of the biggest lake on Earth - Lake Superior.

**Directions:** While visiting a park beach, take an ice cube from your cooler and push it along the sand to make a small hill. This is how portions of the Upper Peninsula landscape were formed. As the mile high glacier melted, it filled the hole and created Lake Superior!

**Background:** The diversity of life in a lake is determined by many factors including water, temperature, nutrients in the lake and the depth of the water, and surrounding soils.

**Directions:** Examine two park lakes from the shore - Lake Superior and an inland lake in the national lakeshore. Estimate which has the coldest temperature, least bottom sediment, and which is the deepest. This lake may have the least diversity of life in it.

Write your answer here:

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Why do you think there is a greater diversity of living things found in warm, shallow, nutrient-rich lakes?

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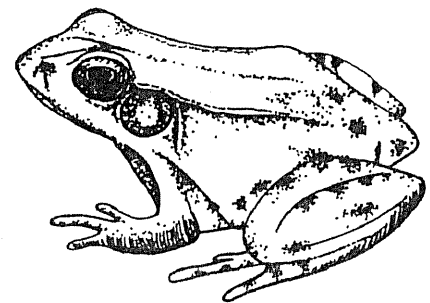
**Write your answer here:**

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**In the space below, make a drawing of a lake bottom. Include a fish and a plant on the bottom.**



## Forests of the National Lakeshore

**Background:** Some forests will regrow themselves if undisturbed by humans and natural elements like fire or windstorms. For example, beech-maple hardwood forests will regrow themselves unless humans clear-cut them or a forest fire burns them down. After disturbance occurs another kind of forest would replace them through a process called succession. Succession is where a series of plant groups grow, die, and are replaced by another type.

**Directions:** Visit a white birch forest in the park. Figure out which kind of small young tree is growing on the forest floor under the birches. Use the guide below. *Is the white birch forest regrowing itself?* **Your answer:**

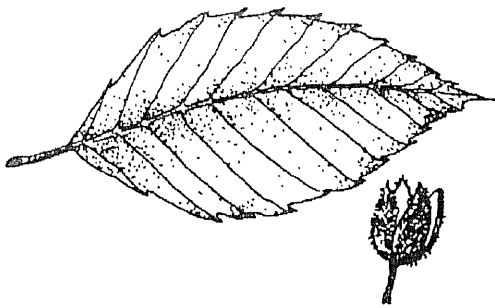
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Next, visit a conifer or pine forest in the national lakeshore. Try to figure out if that forest is regrowing itself as a conifer forest. **Your answer (and why):**

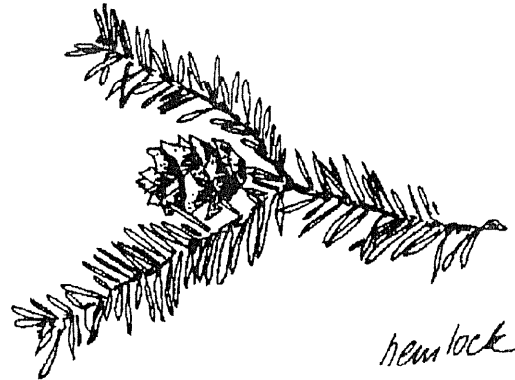
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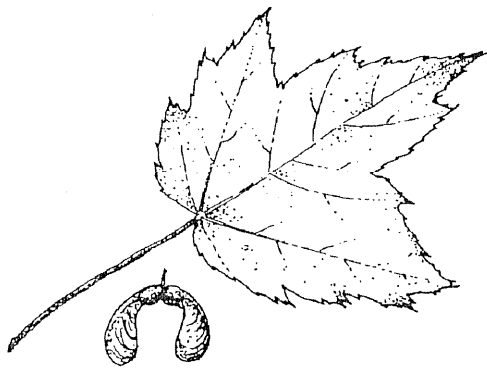
White pine cone



Beech



hemlock



Red maple

**NOTE:** Scientists have shown that old growth forests hold the greatest diversity of life forms. The National Park Service preserves old growth forests.

## Streams of the National Lakeshore

**Background:** The variety of life in a stream depends on many factors including water purity, temperature, sunlight and water acidity. It also depends on the available food and shelter for the organisms.

**Directions:** Visit at least one stream in the park. Without disturbing the stream, make a list of things in the stream you think would make good shelters for insects or fish.

**List:** \_\_\_\_\_  
\_\_\_\_\_

Carefully lift up a rock from the stream bottom. Look for any insects living on it. Draw a picture of that insect below and make up a name for that insect. Try to guess what that insect eats or what eats it - then look for your answers when you get back home or at school. Also - look at a stream near your house. Examine how it is different from the one in the park.

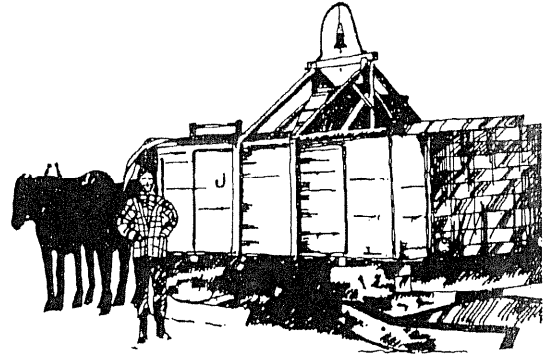
**NOTE:** Some insects like stone flies are indicators of very clean and cold water!

**Your drawing:**

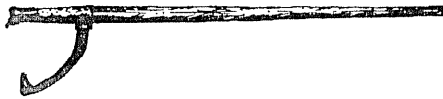
## Logging History of Pictured Rocks

**Background:** How people are able to harvest or use resources depends a great deal on the technology available to them. During the late 1800's certain logging technology was in use here.

**Directions:** Match the logging technology with the job that it performed. Then color in the drawings.



The "**CANT HOOK**" used to move logs around on land. Also called a **log wrench**.



"**BIG WHEELS**" were as big as ten feet in diameter. This Michigan invention changed hauling logs out of the woods from a winter to a year around activity. High clearance made it possible for horses or oxen to haul large logs over stumps.

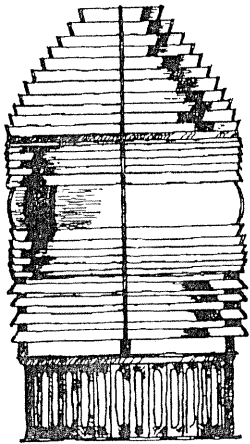


The "**SPRINKLER MACHINE**" dripped water, creating ice roads in the forest for logging sleds to run on in winter.

## Boat Travel Along the Lakeshore

**Background:** There have been many ways to protect people traveling along the lakeshore over the years. Three government agencies, the U.S. Lighthouse Service, U.S. Life Saving Service, and later the U.S. Coast Guard have used the technology available to them to protect lake travelers.

**Directions:** Visit the Grand Marais Maritime Museum or the maritime exhibits at Sand Point. Identify one important life saving technology used by each agency - the Coast Guard and Life Saving Service. Draw pictures and label each in the spaces below. Visit or read about the Au Sable Light Station. Draw a picture of one technology used there to help protect lake travelers.



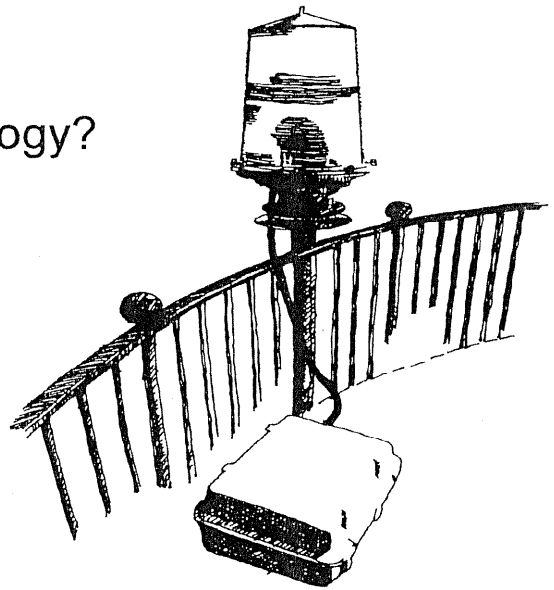
What is this lighthouse technology?

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What is this U.S. Coast Guard Technology?



Extra credit word scramble:

*The invention that put lighthouse keepers out of work:*

D R A R A This word is \_\_\_\_\_.

Today, National Park Service boats and U.S. Coast Guard helicopters flown from Traverse City, Michigan, are used to protect and rescue travelers along the Pictured Rocks shoreline.

## The People of Pictured Rocks

**Background:** People who have lived and worked here have had certain experiences and feelings toward the Pictured Rocks area. To many, it was a difficult and dangerous place. To others, it was a place of great beauty.

**Directions:** Read the following stories and learn about people who have lived here. At the end of your visit to Pictured Rocks National Lakeshore, write a brief story that explains your feelings about this area.

**A geologist exploring Pictured Rocks in 1850:** *"On first examining the Pictured Rocks we were forcibly struck with the brilliancy and beauty of the colors...the cliffs are scooped out into caverns and grotesque openings, of the most striking and beautiful variety of forms. The Chapel Rock represents an altar...as if it was for a place of worship...This structure is truly a temple of nature."*

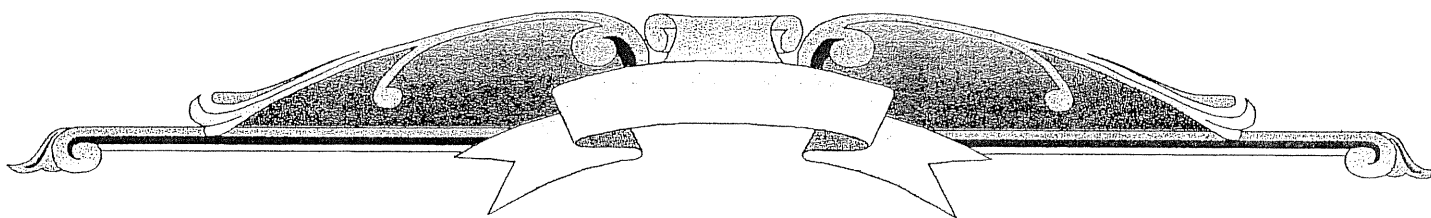
**From a lighthouse keeper:** *"The keeper of a lighthouse had to be a person who appreciated isolation and was willing to undertake an enormous burden of heavy labor. The keeper had to realize that his most important responsibility was to keep the lamp burning each night during the navigation season. Far from being ... a philosopher who had only to watch the waves go by the keeper was a mechanic, carpenter, painter, gardener, and roustabout who labored, often around the clock, seven days a week."*

**A Grand Marais life saver:** *"The job of a life saving service person was a difficult one for a little over a dollar a day in pay. One of the jobs was to walk the beach to look for signs of boats in distress. Sometimes this involved hikes of more than ten miles. Upon finding a boat in trouble a coston signal flare was lit. The surfboat and other equipment would be pulled down to the beach on a cart through the sand. The boat would be rowed out through the dangerous surf drenching all aboard with ice cold water. The official motto of this service is - You have to go out - but you don't have to come back!"*

This image shows a single sheet of white paper with horizontal blue or grey ruling lines. The lines are evenly spaced and run across the width of the page. There is no handwriting or other markings on the paper.



Thank you for becoming a Junior Ranger!



**Congratulations**

ON BECOMING A

**JUNIOR RANGER**

AT

**Pictured Rocks National Lakeshore**

*Jim Northrup*

Superintendent

Park Ranger